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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/521,905  
Filing Date: January 20, 2005  
Appellant(s): KOCK, KLAUS

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John P. Musone  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 21, 2008 appealing from the Office action mailed March 24, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,291,299	Karna	3-1994
6,262,417	Ward	6-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 13, 14, 20, 29-32** are rejected under 35 U.S.C. 102(b) as being anticipated by Karna (5,291,299).

**For claim 13**, Karna discloses a communications system for signaling apparatuses at an airport, comprising:  
at least one central communications apparatus (**read as the control unit (which includes block 2-4 of figure 1, see column 2 line 37-39)**); and a plurality of signaling apparatuses 1 (figure 1), wherein a communication (read as a control signal) between the central communications apparatus and the signaling apparatuses 1 (**see figure 1 and column 2 line 38-39**) is performed via one or more circuits supplying the signal apparatuses with power (**see column 2 lines 1-13**), and wherein the communication between the central communications apparatus and the signaling apparatuses is performed in a frequency range using a number of frequency bands within the frequency range (**see column 2 lines 35-50**).

**For claim 14**, Karna discloses the communication is controlled by a number of time slices (**see column 2 lines 57-65**).

**For claim 20**, Karna discloses up to five time slices are used (**see column 1 lines 37-43**).

**For claim 29**, Karna discloses at least one decentralized communications apparatus is allocated to at least one signaling apparatus, and wherein the decentralized communications apparatus is configured to measure the reception quality of communications signals (**see column 4 lines 27-38**).

**For claim 30**, Karna discloses at least one decentralized communications apparatus is allocated to at least one signaling apparatus, and wherein the decentralized communications apparatus is preprocesses communication signals (**see column 4 lines 2-12**).

**For claim 31**, Karna discloses decentralized communication apparatuses forming an adaptive system (**see column 4 lines 43-50**).

**For claim 32**, Karna discloses a communication path between at least two of the system components is determined using the measured reception quality (**see column 4 lines 21-27**).

**Claims 15, 16, 21 and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Karna.

Consider **claims 15 and 16**, and as applied to claims 13 and 14 above, Karna do not specifically disclose that the frequency range is chosen from the range between 10 kHz and 150 kHz.

Nonetheless, the Examiner takes Official Notice that using the claimed frequency range for communication between system components is well known in the art.

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the system of Karna in order to specifically used the frequency range between 10 kHz and 150 kHz for optimal communication.

**For claim 21**, Karna discloses up to five time slices are used (**see column 1 lines 37-43**).

**Consider claims 23-25**, and as applied to claims 13, 14 and 15, Karna do not specifically disclose that an OFDM method is used for performing the communication.

Nonetheless, the Examiner takes Official Notice that using an OFDM method for communication is well known in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the system of Karna in order to specifically used the OFDM method for optimal communication.

**Claims 17-19 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Karna in view of Ward (6,282,417).

**For claims 17-19 and 22**, Karna discloses all the subject matter of the claimed invention with the exception of using up to ten frequency bands. Ward from the same or similar fields of endeavor teaches up to ten frequency bands are used (**see column 8 lines 57-67**). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to have up to ten frequency bands as taught by Ward in the communication network of Karna. Using up to ten frequency bands as taught by Ward can be modified/implemented into the communication network of Karna. The motivation

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for using up to ten frequency bands as taught by Ward in the communication network of Karna being that it's a radio communication with air controller.

**Claims 26-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Karna in view of Norman et al (2003/0160707).

**For claim 26-28**, Karna discloses all the subject matter of the claimed invention with the exception of using a series circuit and a parallel circuit. Norman et al from the same or similar fields of endeavor teaches the central communications apparatus and the signaling apparatuses are connected via a series circuit (**see paragraph 0023**); the central communications apparatus and the signaling apparatuses are connected via a parallel circuit (**see paragraph 0024**). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to have a series circuit and a parallel circuit to connect the central communications apparatus and the signaling apparatus as taught by Norman et al in the communication network of Karna. Using a series circuit and a parallel circuit as taught by Norman et al can be modified/implemented into the communication network of Karna. The motivation for using a series circuit and a parallel circuit as taught by Norman et al in the communication network of Karna being that it controls the field lighting at an airport.

#### **(10) Response to Argument**

##### **A) Regarding independent claim 13**

Applicant argues:

i) That Karna fails to disclose “*communication between a central communications apparatus and a signaling apparatuses is performed ... using a number of frequency bands...*” (page 5 and page 7 - page 9 of brief). The Karna reference (col. 2, lines 35-50) does not at all disclose such use of multiple frequency bands. The cited passage references a clock pulse synchronized with the line [frequency] and suggests that if the power stage comprises gate-commutated components “it is also possible to use other clock pulse frequencies.” (see page 5 of the brief). There is neither a suggestion of the above use of a number of frequency bands nor any motivation to use such. The cited text only indicates that, in lieu of synchronizing a clock pulse signal with a line frequency, “it is also possible to use other clock pulse frequencies.” Col. 2, lines 55-56 (see page 5 of the brief).

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of “*the communication between the central communication apparatus and the signaling apparatuses is performed in a frequency range using a number of frequency bands within the frequency range*” is incorrect and furthermore fails to account for the entire description of column 2 lines 35-50. Karna discloses the communication step in column 2 lines 35-50, where Karna specifically state that “the block 2 thereby generates clock pulses at a desired frequency, and the block 3 generates a control signal from the clock signals.” Clearly this portion suggest the use of frequency for communication. Karna discloses a number of frequency bands



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in column 2 lines 55-56, where Karna specifically state that "it is also possible to use other clock pulse frequencies." Clearly this portion suggest the use of multiple frequencies. Applicant's argument does not account for these citations. Therefore, the Examiner maintains that Karna teaches the claimed step of "*the communication between the central communication apparatus and the signaling apparatuses is performed in a frequency range using a number of frequency bands within the frequency range*" and respectfully requests the Board to sustain this rejection.

**B) Regarding dependent claim 14**

Applicant argues:

i) That Karna fails to disclose "*the communication is controlled by a number of time slices*" (see page 9 of brief). The Karna reference lacks disclosure of a number of frequency bands within a frequency range, rendering it incorrect to equate appellant's time slices with clock pulses (see page 9 of the brief).

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the communication is controlled by a number of time slices*" is incorrect and furthermore fails to account for the entire description of column 2 lines 57-65. Karna discloses time slices in column 2 lines 57-65, where Karna specifically state that "the block 3 further comprises a logic circuit which forms the portion with no control pulses in each sequence, the duration of the portion e.g. two or

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three clock pulse cycles." Clearly this portion suggests the duration could be two or three clock pulse cycles. Applicant's argument does not account for this citation.

Therefore, the Examiner maintains that Karna teaches the claimed step of "*the communication is controlled by a number of time slices*" and respectfully requests the Board to sustain this rejection.

C) Regarding dependent **claim 15 and 16**

Applicant argues:

i) That Karna fails to disclose "*a frequency range chosen from the range between 10 kHz and 150 kHz*" (see page 11 of brief). Use of a frequency range in a certain defined context, e.g., transmission of communication along power circuits, and there is nothing of record to suggest that such use might be well known.

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*a frequency range chosen from the range between 10 kHz and 150 kHz*" is incorrect. Use of the frequency range for communication between system component is well known in the art. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Official Notice the claimed "*a frequency range chosen from the range between 10 kHz and 150 kHz*" and respectfully requests the Board to sustain this rejection.

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D) Regarding dependent **claim 17-19**

Applicant argues:

i) That Ward fails to disclose “*use of up to ten frequency bands*” (see page 13 of brief). There is no teaching to indicate one skilled in the art would find it obvious to make the claimed combination.

Examiner answers:

i) Applicant’s interpretation of Ward’s disclosure as relied upon by the Examiner and as it relates to the claimed step of “*use of up to ten frequency bands*” is incorrect and furthermore fails to account for the entire description of column 8 lines 57-67. Ward discloses up to ten frequency bands in the abstract, where Ward specifically state that “dedicated frequency (f1-f9) that is used for radio communication between an aircraft in the zone.” This portion suggests that the communication system uses up to ten frequencies while the aircraft is in the zone. Applicant’s argument does not account for this citation. Therefore, the Examiner maintains that Ward teaches the claimed step of “*use of up to ten frequency bands*” and respectfully requests the Board to sustain this rejection.

E) Regarding dependent **claim 20**

Applicant argues:

i) That Karna fails to disclose “*at least five time slices are used*” (see page 10 of brief).

Examiner answers:

i) In response to applicant's argument that the reference fail to disclose "*at least five time slices are used*" it is noted that applicant's argument is incorrect, since the applicant's invention claimed "*up to five time slices are used*". As explained in the answer to Applicant's argument claim B) above, Karna clearly discloses time slices. Karna discloses time slices in column 1 lines 37-43, where Karna specifically state that "a duration equal to one or more cycle times corresponding to the frequency of the clock pulses." Clearly this portion suggests that there is plurality of time slices. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of "*up to five time slices are used*" and respectfully requests the Board to sustain this rejection.

F) **Regarding dependent claim 21 and 22**

Applicant argues:

i) That Karna fails to disclose "*up to five time slices are used*" (see page 12 of brief).

Examiner answers:

i) In response to applicant's argument that the reference fail to disclose "*up to five time slices are used*" it is noted that applicant's argument is incorrect. As explained in the answer to Applicant's argument claim B) above, Karna clearly discloses time

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slices. Karna discloses time slices in column 1 lines 37-43, where Karna specifically state that "a duration equal to one or more cycle times corresponding to the frequency of the clock pulses." Clearly this portion suggests that there are plurality of time slices. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of "*up to five time slices are used*" and respectfully requests the Board to sustain this rejection.

G) Regarding dependent **claim 23, 24 and 25**

Applicant argues:

i) That Karna fails to disclose "*an OFDM method is used for performing the communication*" (see page 12 of brief). Karna does not at all deal with communication in a frequency range using a number of frequency bands.

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*an OFDM method is used for performing the communication*" is incorrect. As explained in section A) above use of multiple frequencies for communication is disclose in Karna. Use of OFDM in the power line communication is well known in the art. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Official Notice the claimed "*an OFDM method is used for performing the communication*" and respectfully requests the Board to sustain this rejection.

H) Regarding dependent **claim 26-27**

Applicant argues:

i) That Norman fails to disclose "*the central communications apparatus and the signaling apparatuses are connected via a series circuit*" (see page 14 of brief). The rejection contends that Karna discloses all else (which is not true) and ignores the fact that Appellant claims a combination which is not found in the prior art (see page 14 of the brief).

Examiner answers:

i) Applicant's interpretation of Norman's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the central communications apparatus and the signaling apparatuses are connected via a series circuit*" is incorrect and furthermore fails to account for the entire description of paragraph 0023. Norman discloses a series circuit in the paragraph 0023, where Norman specifically state that "The lightings 20 on the field are connected via a so-called series transformer 50 in series with each other." This portion suggests that the communication system uses series transformer for the lighting at an airport. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Norman teaches the claimed step of "*the central communications apparatus and the signaling apparatuses are connected via a series circuit*" and respectfully requests the Board to sustain this rejection.

I) Regarding dependent **claim 28**

Applicant argues:

i) That Norman fails to disclose "*the central communications apparatus and the signaling apparatuses are connected via a series circuit*" (see page 14 of brief). The rejection contends that Karna discloses all else (which is not true) and ignores the fact that Appellant claims a combination which is not found in the prior art (see page 14 of the brief).

Examiner answers:

i) Applicant's interpretation of Norman's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the central communications apparatus and the signaling apparatuses are connected via a series circuit*" it is noted that applicant's argument is incorrect, since the applicant's invention claimed "*the central communications apparatus and the signaling apparatuses are connected via a parallel circuit*" which fails to account for the entire description of paragraph 0024. Norman discloses a parallel circuit in the paragraph 0024, where Norman specifically state that "The lightings 20 are connected parallel to each other via their individual transformers." This portion suggests that the communication system uses parallel transformer for the lighting at an airport. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Norman teaches the claimed step of "*the central*

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*communications apparatus and the signaling apparatuses are connected via a parallel circuit*" and respectfully requests the Board to sustain this rejection.

J) Regarding dependent **claim 29**

Applicant argues:

i) That Karna fails to disclose "*the decentralized communications apparatus is measure the reception quality of communication signals*" (see page 10 of brief).

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the decentralized communications apparatus is measure the reception quality of communication signals*" is incorrect and furthermore fails to account for the entire description of column 4 lines 27-38. Karna discloses the decentralized communications apparatus in column 4 lines 27-38, where Karna specifically state that "the comparator is able to change its state and generate the resetting signal." This portion suggests that comparator measure the signal.

Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of "*the decentralize communications apparatus is measure the reception quality of communication signals*" and respectfully requests the Board to sustain this rejection.

K) Regarding dependent **claim 30**



Applicant argues:

i) That Karna fails to disclose “*the decentralized communications apparatus preprocesses communication signals*” (see page 10 of brief).

Examiner answers:

i) Applicant’s interpretation of Karna’s disclosure as relied upon by the Examiner and as it relates to the claimed step of “*the decentralized communications apparatus preprocesses communication signals*” is incorrect and furthermore fails to account for the entire description of column 4 lines 2-12. Karna discloses the decentralized communications apparatus in column 4 lines 2-12, where Karna specifically state that “the reading at which the particular lighting unit is to light up is preset in the counter.” This portion suggests that light up is preset in the counter. Applicant’s argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of “*the decentralized communications apparatus preprocesses communication signals*” and respectfully requests the Board to sustain this rejection.

**L) Regarding dependent claim 31**

Applicant argues:

i) That Karna fails to disclose “*the decentralized communication apparatuses forming an adaptive system*” (see page 10 of brief).

Examiner answers:

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i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the decentralized communication apparatuses forming an adaptive system*" is incorrect and furthermore fails to account for the entire description of column 4 lines 43-50. Karna discloses the adaptive system in column 3 lines 39-48, where Karna specifically state that "its lighting units can be adjusted by means of the power stage 4." This portion suggests that the lighting unit can be an adjustable system. Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of "*the decentralized communication apparatuses forming an adaptive system*" and respectfully requests the Board to sustain this rejection.

M) Regarding dependent **claim 32**

Applicant argues:

i) That Karna fails to disclose "*a communication path between at least two of the system components is determined using the measured reception quality*" (see page 11 of brief).

Examiner answers:

i) Applicant's interpretation of Karna's disclosure as relied upon by the Examiner and as it relates to the claimed step of "*the decentralized communications apparatus is measure the reception quality of communication signals*" is incorrect and furthermore fails to account for the entire description of column 4 lines 21-27. Karna discloses the

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decentralized communications apparatus in column 4 lines 27-38, where Karna specifically state that "the comparator is able to change its state and generate the resetting signal." This portion suggests that comparator measure the signal.

Applicant's argument does not account for this citation. Therefore, the Examiner maintains that Karna teaches the claimed step of "*the decentralize communications apparatus is measure the reception quality of communication signals*" and respectfully requests the Board to sustain this rejection.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

#### **(12) Conclusion**

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Liton Miah/

Conferees:

/Rafael Pérez-Gutiérrez/

Supervisory Patent Examiner, Art Unit 2617

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